


# FY14AAJ-03F

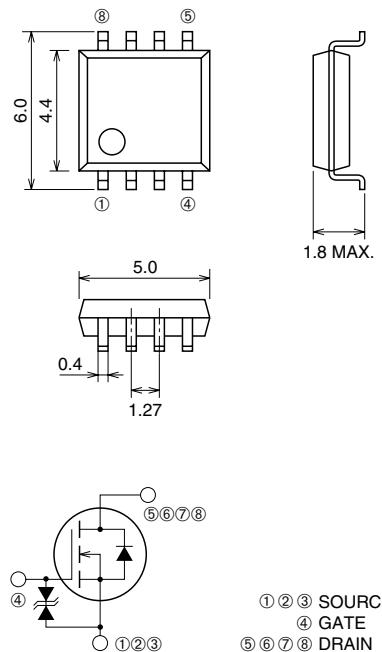
HIGH-SPEED SWITCHING USE

**FY14AAJ-03F**



- 4V DRIVE
- V<sub>DSS</sub> ..... 30V
- r<sub>DS</sub> (ON) (MAX) ..... 8.1mΩ
- I<sub>D</sub> ..... 14A

**OUTLINE DRAWING** Dimensions in mm



① ② ③ SOURCE  
④ GATE  
⑤ ⑥ ⑦ ⑧ DRAIN

**SOP-8**

## APPLICATION

Motor control, Lamp control, Solenoid control  
DC-DC converter, etc.

## MAXIMUM RATINGS (T<sub>c</sub> = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V <sub>DSS</sub>	Drain-source voltage	V <sub>GS</sub> = 0V	30	V
V <sub>GSS</sub>	Gate-source voltage	V <sub>DS</sub> = 0V	±20	V
I <sub>D</sub>	Drain current		14	A
I <sub>DM</sub>	Drain current (Pulsed)		98	A
I <sub>DA</sub>	Avalanche drain current (Pulsed)	L = 10μH	14	A
I <sub>S</sub>	Source current		2.1	A
I <sub>SM</sub>	Source current (Pulsed)		8.2	A
P <sub>D</sub>	Maximum power dissipation		2.3	W
T <sub>ch</sub>	Channel temperature		-55~+150	°C
T <sub>stg</sub>	Storage temperature		-55~+150	°C
—	Weight	Typical value	0.07	g

**ELECTRICAL CHARACTERISTICS** (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR)DSS	Drain-source breakdown voltage	ID = 1mA, VGS = 0V	30	—	—	V
V (BR)GSS	Gate-source breakdown voltage	IG = ±100μA, VGS = 0V	±20	—	—	V
IDSS	Drain-source leakage current	VDS = 30V, VGS = 0V	—	—	0.1	mA
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±10	μA
VGS (th)	Gate-source threshold voltage	ID = 1mA, VDS = 10V	1.0	1.5	2.0	V
rDS (ON)	Drain-source on-state resistance	ID = 14A, VGS = 10V	—	6.5	8.1	mΩ
rDS (ON)	Drain-source on-state resistance	ID = 7A, VGS = 4.5V	—	8.8	12.0	mΩ
rDS (ON)	Drain-source on-state resistance	ID = 7A, VGS = 4V	—	10.0	14.0	mΩ
VDS (ON)	Drain-source on-state voltage	ID = 14A, VGS = 10V	—	0.091	0.113	V
yfs	Forward transfer admittance	ID = 14A, VDS = 10V	—	30	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	2600	—	pF
Coss	Output capacitance		—	750	—	pF
Crss	Reverse transfer capacitance		—	350	—	pF
td (on)	Turn-on delay time	VDD = 15V, ID = 7A, VGS = 5V, RG = 5Ω	—	22	—	ns
tr	Rise time		—	22	—	ns
td (off)	Turn-off delay time		—	60	—	ns
tf	Fall time		—	22	—	ns
Qg	Total gate charge	VDD = 15V, VGS = 10V, ID = 14A	—	53	—	nC
Qgs	Gate-source charge		—	6	—	nC
Qgd	Gate-drain charge		—	15	—	nC
VSD	Source-drain voltage	IS = 2.1A, VGS = 0V	—	0.75	1.10	V
Rth (ch-a)	Thermal resistance	Channel to air	—	—	54.3	°C/W
trr	Reverse recovery time	IS = 2.1A, dis/dt = -50A/μs	—	40	—	ns